

OBSERVATIONS

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ON THE

TREATMENT OF PHTHISIS PULMONALIS.

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EDINBURGH:
SUTHERLAND AND KNOX, GEORGE STREET.

M D C C C L.

[FROM THE MONTHLY JOURNAL OF MEDICAL SCIENCE.]

TREATMENT OF PHTHISIS PULMONALIS.

MANY observing physicians have not failed to notice, that phthisis pulmonalis is ushered in with a bad and capricious appetite, a furred or morbidly clean tongue, unusual acidity of the stomach and alimentary canal, anorexia, constipation alternating with diarrhœa, and a variety of symptoms denominated dyspeptic, or referable to a deranged state of the primæ viæ. Moreover, it can scarcely be denied that, in the great majority of cases, these are the symptoms which accompany phthisis throughout its progress, becoming more and more violent towards its termination. Now, as the nutritive properties of the blood are entirely dependent on a proper assimilation of food, and as this assimilation must be interfered with in the morbid conditions of the alimentary canal, the continuance of such conditions necessarily induces an impoverished state of that fluid, and imperfect growth of the tissues. Moreover, when, under such circumstances, exudations occur, it has been shown by the histologist that they do not exhibit any tendency to perfect cell formations, but that corpuscles are produced, which form slowly, and slowly break down, causing softening, and the production of ulceration, which becomes more and more extensive as the amount of the exudation increases.

The observations of morbid anatomists have shown further, that from one-fourth to one-third of all the individuals who die after the age of forty in this country present traces of tubercular exudation into the lungs. These traces consist most commonly of cretaceous or calcareous concretions in the apices of the organ, corresponding to puckerings on its pleural surface,¹ or to adhesions of the costal and pulmonary pleuræ. Not unfrequently, however, dense cicatrices are observable, extending more or less deeply into the substance of the lung, either with or without pleural adhesions, indicating the complete cure of a former ulcer. So that, while tubercular exudations of moderate extent shrivel up, and are rendered abortive, with great frequency, facts are not wanting to prove that even tubercular ulcers, of considerable extent, occasionally cicatrise, and completely heal, while the tendency to fresh exudation is entirely overcome.

¹ Good examples of this are seen in Figs. 3 and 4 of Plate I., and Figs. 1 and 2 of Plate II.

These facts, which seem now to be very generally admitted by the profession, are daily augmenting in number, in consequence of more accurate post-mortem investigation, and their study has undoubtedly done much, not only to establish the spontaneous curability of phthisis pulmonalis, but to furnish indications of great value to the medical practitioner. In short, a correct interpretation, and then an imitation, as far as possible, of the manner in which nature operates, must be the foundation for a rational treatment of the disease.

The following case offers a well-marked instance of the spontaneous cure of phthisis, and will serve to point out the manner in which the cure was accomplished:—

CASE I.—John Keith, æt. 50, a teacher of languages, was admitted into the Royal Infirmary, February 8, 1844, in a state of coma, and died an hour afterwards. On examination, the membranes of the brain, at the base, were unusually congested, and covered with a considerable exudation of recently coagulated lymph, here and there mingled with bloody extravasation. The apex of the right lung presented the remarkable cicatrix represented in Plate I., consisting of dense white fibrous tissue, varying in breadth from one-fourth to three-fourths of an inch, and measuring about three inches in length. (Fig. 1.) The pleural surface in its neighbourhood was considerably puckered. On making a section through the lung, parallel with the external cicatrix, the substance immediately below presented linear indurations, of a black colour, together with five cretaceous concretions, varying in size from a pin's head to that of a large pea. (Fig. 2.) The surrounding pulmonary substance was healthy. The apex of the left lung was also strongly puckered, and contained six or seven cretaceous concretions, each surrounded by a black, dense, fibrous cyst.

A very respectable-looking and intelligent man, who attended the post-mortem examination, informed me that Keith, in early life, was in very indifferent circumstances, and had supported himself as a writer. At the age of two-and-twenty, or three-and-twenty, he laboured under all the symptoms of a deep decline, and his life was despaired of. About this time, however, he was lost sight of by his friends; but it was afterwards ascertained that he had become a parish schoolmaster, in the west of Scotland, and that his health had been re-established. He returned to Edinburgh six years before his death, and endeavoured to gain a livelihood by teaching Latin and French. He succeeded but very imperfectly, and fell into dissipated habits. Latterly he had become subject to attacks of mania, apparently the result of drink. It was after an unusually severe attack of this kind that he was brought into the Infirmary, where he died in the manner previously described.

This case points out the following important facts,—1st, That at the age of twenty-two or twenty-three the patient had a tubercular ulcer in the right lung, the size of which must have been very considerable when the contracted cicatrix alone was three inches long. 2d, That tubercular exudations existed in the apex of the left lung. It is, therefore, very probable that the statement made by his friend at the examination was correct—namely, that he laboured under all the symptoms of advanced phthisis pulmonalis. It is shown, 3dly, that, after receiving the appointment of a parish schoolmaster, after changing his residence and occupation, while his social condition was greatly improved, these symptoms disappeared. We may consequently infer, that it was about this period that the excavation on the right side healed and cicatrised, while the tuber-

cular exudations on the left side were converted into cretaceous masses, and so rendered abortive. It demonstrates, 4thly, that when, at a more advanced age, he again fell into bad circumstances, and even became a drunkard, tubercular exudations did not return, but that delirium tremens was induced, with simple exudation on the membranes of the brain, of which he died.

From these facts I think we are warranted in drawing the conclusion, that if, during the advanced period of phthisis pulmonalis, those means can be discovered which check further tubercular exudation, and keep up the strength and nutritive processes of the economy, that such exudations as have occurred will be rendered abortive, and that even large ulcerations will heal up and cicatrise. The important point practically is to ascertain what these means are, and how they may be put into operation.

Now a careful examination of phthisical cases will, I think, show that the great obstacle the practitioner has to contend with are the dyspeptic symptoms, which render all his efforts at nourishing the patient in the ordinary way useless. Such individuals have a most capricious appetite, frequently loathe all kinds of animal food, and it will be found that even when they *say* that the appetite is good, and that they live well, the diet actually consumed is either deficient in quantity or in quality. Nothing, again, is more common in the progress of such cases than the temporary improvements which follow a change of diet, of locality, or of temperature. How frequently do poor patients, on coming into an hospital, get better merely from enjoying rest and the regular diet of the institution. How often, after a short journey, or on reaching what has been considered a favourable locality, are the friends of consumptive patients in the higher classes rendered happy by the temporary marked improvement which takes place. I consider that such amendments will always be found commensurate to the stimulus given to the nutritive processes of the economy.

An observation of the circumstances which precede the disease, or its so-called causes, clearly indicate imperfect digestion and assimilation as its true origin. Thus phthisis is essentially a disorder of childhood and youth—that is, a period of life when nutrition is directed to building up the tissues of the body. Diminish the proper quantity of food taken by a healthy man, tubercular diseases are not induced, but if this be attempted with children or young persons, they are a most common result. Thus scrofula and tubercle do not originate in armies and fleets whatever privations they may be exposed to; but they may be observed to do so in foundling hospitals, factories, and among the young of the poor and labouring classes of the community, and especially among tailors, sempstresses, and others who follow sedentary employments. In the higher classes they result from imperfect and insufficient lactation during infancy, or the irregular diet caused by carelessness or over-indulgence. No doubt they may frequently be observed in persons whose parents or relatives have

been similarly affected. From facts of this kind, it has been supposed that hereditary predisposition, a vitiated atmosphere, changeable temperature, certain occupations, humidity, particular localities, absence of light, and so on, predispose to phthisis. Very frequently several of these are found united, so that it is difficult to ascertain the influence of each. When they so operate, however, they invariably produce, in the first place, more or less disorder of the nutritive functions, and are associated with dyspepsia, or other signs of mal-assimilation of food. Cases analogous to the following are exceedingly common.

CASE II.—An Irish girl left her own country, at the age of seventeen, to work as a field labourer in Scotland. In Ireland she lived on potatoes and sweet milk, and once a week had fish or a little meat. The quantity was abundant. In Scotland she lived on coarse oatmeal porridge and dry bread, with butter milk, and did not taste fish or meat once a month. Under this diet her health gradually became affected, and she entered the Royal Infirmary at the age of twenty-one, with all the symptoms and signs of advanced phthisis.

CASE III.—A lad, aged sixteen, of robust health, whose parents and relations were equally healthy, committed a theft. He was imprisoned in goal for three months, confined in a damp stone cell, and lived on the ordinary prison fare. His health insensibly declined. On being liberated he could not obtain employment, and found that his strength had greatly diminished. Two months afterwards he applied at the Royal Dispensary, labouring under phthisis pulmonalis in its advanced stage.

CASE IV.—A woman, aged twenty-six, applied at the Royal Infirmary in 1843, who was greatly emaciated, and complained of harrassing cough and expectoration. On examining the chest, perfect dulness existed under the right clavicle, with loud mucous rale, and imperfect pectoriloquy. The apex of the left lung was healthy. She had a son, aged six years, a perfect picture of health, and an infant at the breast, seven months old, also quite healthy. The mother died in 1844; both children are living, and are quite healthy, for the father, having good wages, is enabled to give them plenty of food.

It is unnecessary to multiply cases of this description. The more they are examined into, the more do I feel persuaded it will appear that the causes of phthisis are not hereditary influences, vitiated atmosphere, &c. &c., although these may co-operate, but almost invariably such circumstances as induce impoverished nutrition resulting from an improper quantity, quality, or assimilation of food.

From a study of the symptoms, causes, morbid anatomy, and histology of phthisis pulmonalis, we are, therefore, led to the conclusion, that it is a disease of the primary digestion, causing, 1st, impoverishment of the blood; 2d, local exudations into the lung, which present the characters of tubercular exudation; and, 3d, owing to the successive formation and softening of these, and the ulcerations which follow in the pulmonary or other tissues, the destructive results which distinguish it. Further observation shows, that circumstances which remove the mal-assimilation of food frequently check further tubercular exudations, while those which previously existed become abortive, and that occasionally more extensive excavations in the pulmonary tissue may, owing to like circumstances, heal up and cicatrize.

The foregoing considerations render it evident, that the cure of phthisis by art will be proportionate to our power of regulating the nutritive powers in that disease, and controlling those circumstances which induce, 1st, the diseased constitution of the blood; 2d, the local exudation; and, 3d, the ulceration of the pulmonary tissue. A discussion of these subjects would lead us into a history of nutrition and exudation, with its results. Referring to the February number of the *Monthly Journal* for observations on the latter part of the subject, I shall content myself at present with a short résumé of what I have formerly published, as to the nature of the altered nutrition which exists in phthisis pulmonalis, and other tubercular diseases.¹

A healthy nutrition of the body cannot proceed without a proper admixture of albuminous and oleaginous elements. This may be inferred from the physiological experiments of Tiedemann and Gmelin, Leuret and Lassaigne, Magendie, and others; from an observation of the constituents of milk, the natural food of young mammiferous animals; from a knowledge of the contents of the egg, which constitute the source from which the tissues of oviparous animals are formed before the shell is broken; and from all that we know of the principles contained in the food of adult animals. The researches of chemists, such as those of Prout, Liebig, and others, point to the same generalisation, when they assert that carbonised and nitrogenised food are necessary to carry on nutrition, inasmuch as oil is a type of the one, and albumen of the other. The chemical theory is imperfect, however, because it does not point out *how* these elements form the tissues; for it is not every form of carbonised or of albuminous food that is nutritious, but only such kinds of them as are convertible into oil and albumen.

The reason of this was first pointed out by Dr Ascherson of Berlin, in 1840, and made known by me to the profession in this country in 1841. I have since endeavoured to show that the elementary molecules formed of a particle of oil, surrounded by a layer of albumen, which are produced, as he described, by rubbing oil and albumen together, are not developed directly into blood-globules and other tissues, as he supposed, but must first pass through a series of

¹ Treatise on the *Oleum Jecoris Aselli*. London. 8vo. 1841.

On the Frequent Spontaneous Cure of Pulmonary Consumption, and the Indications furnished by Pathology for its rational treatment.—*Edin. Med. and Surg. Journal*. 1845.

On the Minute Structure and Chemical Composition of Tubercular Deposits.—*Northern Journal of Medicine*. 1846.

On the Structural Relation of Oil and Albumen in the Animal Economy, &c. Read to the Royal Society of Edinburgh, 19th April 1847.—*Monthly Journal*. September 1847.

Appendix to the Treatise on the *Oleum Jecoris Aselli*. Edin., Nov. 1847.

On Cancerous and Canceroid Growths. Edinburgh. 8vo. 1849.

In the above works and memoirs will be found a full exposition of the molecular theory of the action of cod-liver oil, long before it was thought of by other writers.

transformations, a knowledge of which is highly important, not only to a comprehension of nutrition generally, but especially to that anormal condition of it which occurs in phthisis. Thus the successive changes which occur for the purposes of assimilation in the healthy economy may be shortly enumerated as follows:—1st. Introduction into the stomach and alimentary canal of organic matter. 2d. Its transformation by the process of digestion into albuminous and oily compounds: this process is chemical. 3d. The imbibition of these through the mucous membrane in a fluid state, and their union in the termini of the villi and lacteals to form elementary granules and nuclei: this process is physical. 4th. The transformation of these, first, into chyle corpuscles, and, secondly, into those of blood, which is a vital process. It is from this fluid, still further elaborated in numerous ways, that the nutritive materials of the tissues are derived, so that it must be evident, if the first steps of the process are improperly performed, the subsequent ones must also be interfered with. Hence we can readily comprehend how an improper quantity or quality of food, by diminishing the number of the elementary nutritive molecules, must impede nutrition.

The peculiarity of phthisis, however, is, that an excess of acidity exists in the alimentary canal, whereby the albuminous constituents of the food are rendered easily soluble, whilst the alkaline secretions of the saliva and of the pancreatic juice, are more than neutralized, and rendered incapable either of transforming the carbonaceous constituents of vegetable food into oil, or of so preparing fatty matters introduced into the system, as will render them easily assimilable. In consequence, more albuminous than fatty matters enter the blood, and the necessary waste of structure is supplied by the absorption of the adipose tissues of the body. Hence the emaciation which characterizes the disease. In the meanwhile, the lungs not having so much carbon to excrete in the form of carbonic acid, become especially liable to local congestions, leading to exudation of an albuminous kind, which is tubercle. This, in its turn, being deficient in the necessary proportion of fatty matter, elementary molecules are not formed so as to constitute nuclei capable of further development into cells,—they therefore remain abortive, and constitute tubercle corpuscles. Thus the local disease is added to the constitutional disorder, and that compound affection is induced, which we call phthisis pulmonalis—consisting of symptoms attributable partly to the alimentary canal, and partly to the pulmonary organs.

To improve the faulty nutrition which originates and keeps up the disease, it is of all things important, therefore, to cause a larger quantity of fatty matter to be assimilated. A mere increase in the amount, or even quality of the food, will often accomplish this, as in the case of Keith (Case I). The treatment practised, some years ago, by Dr Stewart, of Erskine, which consisted in freely administering beef-steaks and porter, and causing exercise to be taken in the open air, excited considerable attention from its success. I have

been informed, that in some parts of America the cure consists in living on the bone marrow of the buffalo, and that the consumptive patient gets so strong in this way, that he is at length able to hunt down the animal on the prairies. All kinds of food rich in fat, will not unfrequently produce the same effects, and hence the value long attributed to milk, especially ass's milk—the produce of the dairy, as cream and butter, fat bacon, caviar, &c.

But, in order that such substances should be digested and assimilated, the powers of the stomach and alimentary canal must not have undergone any great diminution. In most cases it will be found that the patient is unable to tolerate such kind of food, and that it either lies undigested in the stomach, or is sooner or later vomited. Under these circumstances, the animal oils themselves are directly indicated, by giving which, we save the digestive apparatus, as it were, the trouble of manufacturing or separating them from the food. By giving considerable quantities of oil directly, a large proportion of it is at once assimilated, and is rendered capable of entering into combination with the albumen, and thereby forming those elementary molecules so necessary for the formation of a healthy chyle. Such, it appears to me, is the rationalé of the good effects of cod-liver oil.

Since I introduced this substance to the notice of the profession as a remedy for phthisis, in 1841, I have continually prescribed it in hospital, dispensary, and private practice. I need not, perhaps, say, that I have given it in a very large number of cases, and have observed its effects in all the stages of the disease, and under almost every circumstance of age, sex, and condition. I have had the most extensive opportunities of examining the bodies of those who have died after taking it in considerable quantities, and am still observing the cases of many persons who may be said to have owed their lives to its employment. Further, I have carefully watched the progress it has made in the good opinion of the professional public, and perused all that has been published regarding it in the literature of this and other countries. It were certainly easy for me, therefore, to write at great length on this subject; but I do not see that anything of utility could be added to what I have already published. The following is a summary of my views regarding cod-liver oil, as a remedy for phthisis :—

1. Cod-liver oil is, as M. Taufflied pointed out, an *analeptic* (*αναλαμ-βανω*, to repair), and is indicated in all cases of anormal nutrition dependent on want of assimilation of fatty matter.

2. It is readily digestible under circumstances where no other kind of animal food can be taken in sufficient quantity to furnish the tissues with a proper amount of fatty material.

3. It operates by combining with the excess of albuminous constituents of the chyme, and forming in the villi and terminal lacteals those elementary molecules of which the chyle is originally composed.

4. Its effects in phthisis are to nourish the body, which increases

in bulk and in vigour ; to check fresh exudations of tubercular matter, and to diminish the cough, expectoration, and perspiration.

5. The common dose for an adult is a table-spoonful three times a-day, which may often be increased to four, or even six, with advantage. When the stomach is irritable, however, the dose to commence with, should be a tea or dessert-spoonful.

6. The kind of oil is of little importance therapeutically. The pure kinds are most agreeable to the palate ; but the brown coarser kinds have long been used with advantage, and may still be employed with confidence whenever cheapness is an object.¹

7. I have never observed its employment to induce pneumonia—as it has been lately supposed to do by Dr Benson. On the other hand, nothing is more common than to find after death more or less pneumonic condensation around tubercles.

8. Neither have I ever been able to trace fatty liver or kidney to its use, however long continued, although such complications of phthisis are also exceedingly frequent.

It is rare that the administration of cod-liver oil will prove sufficient to conduct a case of phthisis pulmonalis to a happy conclusion. It is the more important to notice this, since it has become an object of commercial enterprise, and its use in every disease advocated ; for, although it will frequently check phthisis for a time, and nourish the exhausted frame, great attention to the future progress of the case, and a careful management of the various symptoms and conditions presented, will be necessary, before the crude tubercles become cretaceous and encysted, and the ulcerations in the lungs completely cicatrized. At present this remedy is very extensively given, and its temporary good effects are allowed ; but few persons in this country have watched for a sufficiently long time the progress of

¹ It has lately been maintained, that the *purity* of the oil favours its therapeutic action. Not to mention how opposed this idea is to the long experience of numerous practitioners in Germany, I may state a fact, which is alone sufficient to refute it. When in Birmingham, last autumn, I was shown, at the General Hospital there, by Dr Heslop, the resident medical officer, the common brown oil, used by curriers in the preparation of leather, of which, he told me, between two and three gallons were consumed every week in the institution. It cost only 2s. 6d. a gallon, and was employed on the ground of cheapness, but produced all the good effects of the remedy in a marked degree. Still the efforts now very generally making by druggists to improve and cheapen this substance ought to be encouraged, for there can be no doubt it is generally much more agreeable, if not more useful, for the patients to take a fresh and pure, than a rancid and an impure, oil. In common justice to Messrs Parker and Co., oil merchants, Edinburgh, it should not be forgotten that they have manufactured cod-liver oil, which has never been surpassed in purity, and which has been extensively employed by the profession during the last *eight years*, and this at the moderate price of 9s. a gallon. Neither should it be forgotten by those in London, who lay claim to any merit for having purified this substance, that it has been from time immemorial made so tasteless by the Shetlanders, as to be used instead of butter in cooking ; and that Dr Donovan, of Dublin, made it perfectly pure in 1840. (*Treatise on the Ol. Jecoris Aselli*, p. 26.)

phthisical cases placed under its influence, so as to enable them to speak with any confidence as to the ultimate result. To prevent disappointment, therefore, and the abandonment of a valuable remedy from its excessive and injudicious administration, it may be useful to detail, shortly, a few cases of phthisis which have been under my observation, for periods varying from five to nine years, and indicate the other circumstances it will be necessary to attend to, with a view of rendering even cod-liver oil of permanent advantage. It is only by studying individual examples of the disease, and observing the numerous and varied combinations of symptoms and indications that each presents, that the treatment of phthisis, and the difficulties the practitioner has to combat, can in any way be understood. Statistical details, by which the effects of any plan of treatment are tested, by jumbling together cases essentially different in their nature and progress, so far from assisting the practitioner, or advancing our knowledge, are not only useless at the bedside, but, by causing an idea of certitude, which has no real existence, must ultimately lead to great disappointment.

The following case, which has been under my observation for eight years, will exhibit some of the numerous conditions that present themselves, and the watchful care necessary in order to conduct the disease towards a favourable termination :—

CASE V.—A medical student requested me to examine his chest, in the autumn of 1842. He was tall, thin, and sallow, aged twenty, with frequent cough, accompanied by purulent expectoration. On percussion, there was marked dulness on the right side, beneath the clavicle. On listening in this situation, a loud mucous râle accompanied the inspiratory murmur, and there was loud bronchophony. On the left side the inspiratory murmur was harsh, the expiratory murmur prolonged, but no increased vocal resonance could be detected, and no dulness on percussion. On interrogation I learnt that his illness had been progressing slowly for at least several months, that he had latterly become much emaciated, that there was considerable perspiration at night, that his appetite had been very capricious, but was now good, and that there had been no diarrhœa. The pulse was quick, the tongue furred, and he complained of slight thirst. I learnt from his friends, however, that his appetite was wretched, and that it was very seldom that he could be brought to eat any animal food whatever. This young man, therefore, had a considerable amount of tubercular exudation in the apex of the right lung, which was softening, and a much slighter amount of it in the apex of the left lung, which was still crude. I prescribed a tablespoonful of cod-liver oil three times a-day, and good diet. I told him to clothe himself well, avoid sudden changes of temperature and exposure to cold, and during the winter months to confine himself to his room, the temperature of which was to be regulated between fifty and sixty degrees.

I saw him occasionally during the winter of 1842-3, during which period it became necessary to suspend the use of the oil every now and then, on account of the nausea it occasioned. His health and strength, however, greatly improved, and the moist râles entirely disappeared, although he continued to expectorate a small quantity of viscous purulent matter. It was with the utmost difficulty he could be confined to his apartment, and it at length became so irksome, that he went out without my knowledge. At first he used considerable caution, and no ill effect arose; but, in May 1843, I was summoned to him in great haste. He had spent the previous evening with some

companions, had drunk more than usual, and walked home past midnight, the weather being rather chilly. I found the cheeks flushed, strong febrile symptoms, laborious breathing; and, on auscultation, loud crepitating, passing into mucous râles were heard over the upper third of right side, with the same dulness on percussion as formerly. I prescribed quietude, with tartar-emetic and opium in large doses, frequently repeated. In a few days the fever had left him, but the moist râles in the right lung continued; the expectoration was again copious, the sweating at night had returned, and there was an unconquerable repugnance to every kind of food. Various means were tried to diminish the irritability of the stomach—effervescing powders, hydrocyanic acid, creosote, various anodynes, stimulants, alkalies, and bitters—but without avail. In June, he was reduced to a condition much worse than when I at first saw him, and was once more greatly emaciated, and so weak that he could not stand five minutes, without enduring great fatigue. I now ventured to prescribe the oil again, in teaspoonful doses, combined with a drop of the oil of cloves, three times a-day. It was retained on the stomach, and was taken regularly for two weeks, at the end of which period he had greatly improved. After a time, the dose was increased to a tablespoonful twice, and then three times, a-day. In August, all moist râles had again disappeared, and were replaced by a distant blowing murmur, with loud bronchophony. The apex of left lung fortunately had undergone no change since I first examined it. He was now able to walk, his strength having been much restored; and I informed him of the critical position in which he was, and impressed upon him the necessity of great caution. He seemed thoroughly roused to a sense of his danger, and left Edinburgh to see his friends in the country.

In November 1843, he returned to continue his studies in the University. With the exception of being somewhat stronger, and in better spirits, he was in much the same condition as when I last saw him. The problem now was, how to get him over the ensuing winter. I was in hopes that if, during the next six months, no fresh exudations occurred, and the cavity or cavities in the right lung remained dry, that they might ultimately cicatrize. I, therefore, advised him not to attend classes at all, and make up his mind to remain in his own lodgings, which were to be chosen especially for the purpose, and kept at an equable temperature. Accordingly, when the weather became cold—which, however, was not until January—he remained at home, and although the confinement was exceedingly irksome, he bore it with great resolution. It was about this period I first noticed strong friction or creaking murmurs at the apex of the right lung, which indicated that the pleuræ in that situation were greatly affected.

Matters remained in this condition until February 1844; I every day expecting that he would break from his confinement, or commit some imprudence which would induce fresh exudation in the lung. At this time I was sent for late at night, and found him greatly alarmed. In the course of an hour he had spat up about a pint of florid blood, and when I saw him he was coughing violently, and expectorating frothy mucus, deeply tinged of a red colour. I advised him to restrain the cough and efforts at expectoration. I sat with him some time, his excitement gradually diminished, and the cough and hæmoptysis ceased. He told me that for some days he had experienced considerable tightness and a sense of constriction in the upper and right part of his chest. On asking him whether this continued, I ascertained that it had completely disappeared. On auscultation, I heard loud friction râles, like the creaking of leather, over the apex of right lung. The inspiration was accompanied by a hoarse blowing murmur. The expiration prolonged; and there was the same loud bronchophony. Sounds over left lung the same as formerly. It was evident to me, from this examination, that the cavity was contracting; that in doing so some blood-vessels had been ruptured, and that much was now to be feared from repeated attacks of hæmoptysis. For a period of four months, indeed, he now had occasional returns of spitting of blood, varying in quantity, but rarely

exceeding three ounces in amount, and sometimes only slightly tinging the sputa. He was treated at these times by means of quietude, opiates, and acetate of lead, none of which, however, appeared to me to possess any counteracting effect, as the hæmoptysis was evidently the result of changes in the lung, in connection with the contraction of the tubercular ulcers. He always felt more or less constriction in the chest before any considerable hemorrhage, which was invariably relieved by it. Occasionally, also, he experienced considerable dyspnœa, and an intense longing for fresh air. On one of these occasions in April, he rushed out of his lodgings, and walked rapidly on the Calton Hill, when he found the dyspnœa left him. He insisted on repeating this on similar occasions, and he assured me it always produced the desired effect. As the season advanced, he prolonged his walks. A very common one with him was to the summit of Arthur's Seat, and in June all hæmoptysis and dyspnœa left him. He recommenced his studies also in the University at the commencement of the summer session in May.

At the end of July, I again carefully examined his chest. Although dulness under the right clavicle still continued, I was satisfied it was not so intense as formerly. On auscultation, there were loud friction noises, which completely masked the respiratory murmurs. The vocal resonance continued. On the left side there was still slight roughness of the inspiration, and prolongation of the expiration, but nothing more. His general health, though far from good, was much improved. He was still pale and thin. There was occasionally cough and tough expectoration. The appetite, he said, was good, and the bowels regular. I again cautioned him to avoid all exposure to cold and damp—to live well—to take exercise—and apply occasional counter-irritation to his chest, and he left Edinburgh for the autumnal recess.

In November 1844 he returned to Edinburgh. He was greatly improved in appearance, and described himself as being much stronger. During the holidays he had used horse exercise frequently, and been much in the open air. There was still occasional cough and tough expectoration, not tinged with blood. The physical signs were much the same as when I last saw him, although the intensity of the friction-murmurs had somewhat diminished. He positively refused to confine himself the next winter as he had done the last, being convinced that he could not breathe the confined air of a chamber without injury; and it was with some difficulty that I obtained a promise from him not to go out during wet, or unusually severe cold weather. Every other precaution to avoid exposure to cold, and all exciting causes of exudation, was to be carefully observed. He attended his classes regularly for six weeks, when, owing to the weather, he lost several lectures. This caused him great annoyance,—the more so, as he intended to present himself for examination in the spring.

About the middle of January 1845, he sent for me. I found him with the face flushed, skin hot, rapid pulse, coughing violently, and expectorating a muco-purulent matter, tinged of a rusty colour. On listening over the apex of the right lung, there were heard crepitating and mucous râles, mingled with friction-murmurs similar to those which formerly existed. The rest of the lung was free. The apex of left lung was not affected. It was clear that a new attack of pulmonary congestion and exudation had taken place. He confessed that he had been very unwilling to send for me; that he had felt himself getting worse for the last week, and was conscious that the attack had been occasioned by his persistence in attending classes, and sitting so many hours probably in damp clothes and wet boots. The same treatment as was adopted on a former occasion was again put in force—quietude, with tartar-emetic, and opium. In a week, the febrile symptoms had much abated, but the pulse continued quick; the appetite was destroyed, and his strength was again much reduced. All attempts to eat occasioned nausea and disgust—he could take no animal food. The tongue was loaded, and there were almost continued acid cruetations. I ordered tartar-emetic ointment to the chest;

and, instead of the tartar-emetic and opium internally, prescribed 8 grains of carbonate of magnesia, with ℥j. of sal volatile, to be taken three times a-day in a bitter infusion. Three days afterwards, I was much alarmed at the occurrence of diarrhœa for the first time, which continued two days, and evidently diminished his strength. Fortunately it ceased on suspending the mixture, and giving aromatic and astringent powders, with a quarter of a grain of powdered opium. In the beginning of February my patient was once again reduced to nearly the same condition that he had presented three years previously. I was encouraged, however, on listening to his chest by hearing only the friction and dry cavernous râles at the apex of the right lung. The crepitation had disappeared, and occasional mucous râle was heard about the middle of the right back. I made every effort now to re-establish the appetite, and introduce nourishment. Solid animal food and cod-liver oil were immediately vomited. All that he could retain in the stomach was a little rice pudding and milk. It was evident to me that unless the stomach could be quieted and rendered capable of digestion, that he must sink. For two days I tried small doses of liquor potassæ and vegetable bitters, with effervescing draughts. I then gave a teaspoonful of cod-liver oil, but it caused insupportable nausea, and was vomited several times, although mixed with several essential oils in succession. The oil was therefore suspended, and ten drops of naphtha, with ℥j. of tincture of cardamons in ℥j. of infusion of Colomba, given three times a day. This medicine evidently checked the tendency to nausea and vomiting, and after continuing it three days, the cod-liver oil was again tried, and was now retained in teaspoonful doses. During the next fortnight it was found necessary to suspend the oil on two separate occasions, and to have recourse to the naphtha mixture. At the end of that time, however, he took it in dessert-spoonful doses, and from this period he once more began to recover.

It is unnecessary to record all the successive steps his improvement presented. In April he could again sit up, and at this time was taking four table-spoonfuls of the oil daily. At the end of that month he went out, and commenced taking gentle exercise whenever the weather permitted; and in May he was in much the same condition as he was at the commencement of the winter session. On examining his chest, I now noticed marked flattening under the right clavicle. All moist râles had disappeared. Friction râles could only be heard at the end of a deep inspiration—there was loud bronchophony, and considerable dulness on percussion.

During the summer session he attended his classes with tolerable regularity, and prepared himself for his examination. On this subject he was very anxious; indeed much more so, it appeared to me, than he was with respect to his health. Seeing now his anxiety on this subject, I also became desirous that his mind should be relieved. He accordingly left Edinburgh about the end of July for London, where shortly after he passed the examinations at the College of Surgeons and at Apothecaries' Hall. On the approach of winter he wrote to me, saying that he was much better, and that he intended passing the winter with some relations in the West of England. He seemed to be impressed with the importance of avoiding every cause which could again excite a fresh pulmonary attack, and promised implicit obedience to my oft-repeated instructions. I heard from him from time to time, and he passed through the winter without accident.

It was in London during August 1846, that I once more examined my patient's chest. There was still marked dulness under the right clavicle, but it was by no means so deep or so extensive as formerly. There was a considerable hoarse murmur during inspiration, but the blowing character had disappeared. The expiration was prolonged and accompanied by a sibilant murmur. The vocal resonance was greatly increased. He was still pale and thin, but capable of taking considerable exercise. Every now and then he felt constriction in the right chest, which was removed by exercise in the open air. There was also occasional cough, but no expectoration. He gave me three

cretaceous concretions, about the size of large pins' heads, which he had past up the previous spring. He lived on the plainest animal food, and drank nothing but milk and water. His appetite had of late considerably improved, and he was now free from all dyspeptic symptoms. He had continued to take three tablespoonfuls of the oil daily up to a late period. I recommended his taking two tablespoonfuls of the following mixture three times a day:—*R. Ferri Citratis, ℥ij.; Syr. Aurantii, Tr. Card. c. aa. ℥j.; Inf. Colombæ, ℥iv. m.*

He now established himself as a general practitioner in one of the midland counties of England, where he has been practising ever since. In the autumn of 1849, I again saw him. His appearance then and now is robust. He takes considerable exercise daily. There is no cough or expectoration. There is considerable flattening of the chest below the right clavicle; but he inspires freely, and without difficulty. On percussion the sound is still dull, but much less so, and more limited in extent, than formerly. On auscultation, there is almost complete absence of respiratory murmurs at the apex of lung, but a little lower down there is prolonged expiration, which is gradually lost in the healthy breath sounds. There is great increase of vocal resonance, probably owing in part to the density of the adhesions, and in part to the condensation and puckering of the lung. The left lung is healthy. He took the chalybeate and bitter mixture for some time with marked advantage. He found the appetite improve and his strength increase. At present he takes no medicine, eats heartily, and drinks only milk and water. His age is now twenty-eight.

In this case (of which, notwithstanding its length, I have only given a sketch, rather than a minute report), I presume there took place in the lung the same morbid changes as were described in Case I. In that case, cicatrization of the tubercular cavity occurred spontaneously,—in the other the disease was subjected to a long treatment; and it may be fairly asked, whether art was in any way connected with the happy result? As it is not from one case alone that we can arrive at the correct solution of such a question, I must direct attention to others, which, though not identical, are similar as to their character. I find it will be necessary, however, to abridge the details of these, in order to bring this communication within reasonable limits.

CASE VI.—Mr B——, æt. 35, a superintendent of chemical works, consulted me in 1843, labouring under cough, difficulty of breathing, slight purulent expectoration, and increasing weakness and emaciation. On examining his chest, I found, on percussion, marked dulness under the right clavicle, and on auscultation, a sub-mucous râle with the inspiratory murmur, prolonged expiration with sibilant râle, friction sounds, and bronchophony. The left lung was healthy. He was ordered to take a tablespoonful of cod-liver oil three times a-day, and apply counter-irritation under the right clavicle. He continued his employment, took the oil regularly, and soon observed a marked improvement in his health. He took the oil uninterruptedly for nine months. Since then there has been occasional diarrhœa, and every now and then a return of the cough and shooting pains in the chest. He has, however, been enabled to continue his employment, and feels satisfied that the oil was of the utmost service to him. At present he sometimes experiences a sense of constriction at the upper part of right lung, and feels breathlessness on ascending a stair or making any unusual exertion. The slightest amount of free chlorine in chloroform brings on a paroxysm of cough. On percussion there is now only slight dulness under the right clavicle, but marked increase of vocal resonance. He is robust, and, with the exception of the occasional asthma alluded to, in perfect health.

CASE VII.—Robert Kerr, æt. 32, entered the Royal Infirmary, August 1844, in a state of extreme emaciation. Such was his weakness that he could not stand without support. The disease was of at least two and a-half years' standing. He has been more or less addicted to drink. The appetite has been uniformly bad, and there has been often great thirst and occasional hæmoptysis and diarrhœa. There was profuse sweating at night, hollow suffocative cough, copious purulent expectoration, and great dyspnœa. On percussion there was complete dulness under the right clavicle, loud gurgling râle could be heard in the same situation, with perfect pectoriloquy. The left lung, however, was comparatively free, presenting slight tubular inspiration, prolonged expiration, and no increase of vocal resonance. He came under my care in November, the treatment having hitherto been directed to the relief of the cough, dyspnœa, diarrhœa, and other occasional symptoms. He was still excessively weak, with profuse sweatings at night, and copious purulent expectoration. The physical signs remained the same. He was now ordered a tablespoonful of cod-liver oil three times a-day, which he took regularly for three months. Two weeks afterwards he was much better, and could stand without assistance. Tartar-emetic ointment was then ordered to be rubbed under the left clavicle, and counter-irritation was kept up for three weeks. Gradually the pectoriloquy merged into bronchophony, the gurgling râle disappeared, and was replaced by dry, hoarse, and blowing sounds. The expectoration diminished, the night sweats ceased, the patient became evidently more robust, and during the whole of the third month he remained under my care he considered himself quite well. It so happened at this time that numerous cases required admission, and I found one morning (January 15, 1845), that he had been dismissed by the visiting Committee of Management, on the authority of the medical manager in that committee, as no longer being a fit object for the charity.

I lost sight of this man for eighteen months; but one day, in June 1845, I met him on the South Bridge, looking remarkably well. He told me that he had continued taking the oil for several months after leaving the Infirmary, and had obtained employment as a labourer on the North British railway, which was then in progress of formation. He was still so employed. I took him into a common stair and examined his chest. On percussion, there was still marked dulness on the left side, under the clavicle. On auscultation, there was very feeble respiratory murmurs, with occasional friction sounds at the apex; but a little lower down the breath-sound was loud, and the expiration prolonged. He stated that on going up a hill or a flight of stairs great breathlessness was excited, but that in every other respect he was in good health.

CASE VIII.—Louisa —, æt. 22, a milliner, applied at the Royal Dispensary with the usual symptoms of phthisis in its advanced stage, in the summer of 1844. At the apex of the left lung, there was dulness on percussion, loud mucous râle, and bronchophony. The right lung was tolerably free of disease. For the last six months she had obtained very little work, and her food was deficient both in quantity and quality. Indeed, she lived almost entirely upon dry bread, and a little tea. A tablespoonful of cod-liver oil was ordered to be taken three times a-day. She attended at the Dispensary two or three weeks, and, as the oil caused no nausea or sickness, four tablespoonfuls were ordered to be taken daily. I lost sight of this girl for twelve months; but she again applied at the Dispensary, in the summer of 1845, labouring under a slight bronchitic cough she had contracted a few days previously. Her appearance was so improved that I did not recognise her; but she told me that she had taken the oil continuously for nine months, on account of the great benefit it had produced. Gradually all her symptoms had disappeared; she became stout and strong; and now considered herself in perfect health. On percussion, all dulness had disappeared; and on auscultation, with the exception of prolonged expiration, and occasional sibilant râle, nothing unusual could be heard. I was so struck with the perfect disappearance of the disease, that I

called in my colleague, Dr Spittal, who was receiving patients in another room, to confirm the absence of the physical signs characteristic of a cavern, which he did.

There could be no doubt as to the existence of softened tubercle in the apex of the left lung in 1844, nor of its disappearance in 1845. At both periods the girl was repeatedly and carefully examined, not only by myself, but by from six to twelve gentlemen, who constituted my poly-clinical class; and on both occasions she was the subject of lecture.

In the four last cases related, I consider that there has been a perfect cure of phthisis pulmonalis in its advanced stage. In Cases V. and VII. there were distinct cavities; in Cases VI. and VIII. the tubercle had softened, and probably occasioned small anfractuous cavities—but this cannot be determined. In Cases V., VI., and VII., the healing was followed by permanent dulness, more or less consolidation of the apex of the lung, and dense adhesions between the pleuræ covering the diseased part. In Case VIII., the lesion must have been limited, and probably produced a fibrous cicatrix, without adhesion or great condensation; and hence the absence of dulness and vocal resonance afterwards. In Case VI. the cure was accompanied by an emphysematous condition of the lung—a frequent accompaniment of cicatrization in part of the pulmonary tissue. That the cure may be ascribed to art, and was not spontaneous in these cases, will, I think, be evident from studying the facts they presented. In all of them, improvement was contemporaneous with the period when cod-liver oil was digested, and rendered assimilable to the wants of the economy, and in this respect confirms the views I have put forth with regard to the mode in which the remedy operates.

Our ideas with regard to the good effects of treatment, however, would be very limited, if we confined our observation merely to such cases as could be shown to have undergone a permanent cure. Such is the difficulty of following the progress of these cases, that they must always be limited in number. I am disposed, however, to believe that the more extended a knowledge of the pathology and diagnosis of phthisis becomes, and the more generally a treatment, founded on the principles I am contending for, is adopted, the more they will increase in number. But the advantage of a rational treatment may be observed in most cases of phthisis, although an ultimate cure is not attained. Life may certainly be prolonged, and the distressing symptoms greatly ameliorated. No doubt, it will always be difficult to ascertain how much of the benefit is to be attributed to art, and how much to nature; but when we ascribe an analeptic power to an oleaginous substance, and find, on its administration, that the nourishment of the individual is improved, that his strength augments, and a check is given to the disease, our faith in the remedy augments the more frequently these circumstances are witnessed.

I could give a great number of cases observed in private, dispensary, and hospital practice, in which the apparent good effects of the

treatment were extraordinary, but in which either the termination of the case is unknown, or where the disease ultimately proved fatal. The following are instances of this :—

CASE IX.—Agnes McLaren, married, æt. 45, admitted into the clinical ward, No. 12, of the Infirmary, November 22, 1844, has suffered from ill health and occasional cough for the last four years at least. This is the fifth time she has been in the house, from which she has always been discharged as relieved, after a treatment varying from two to four months in extent, and consisting, in addition to cough mixtures, anodynes, antispasmodics, astringents, &c., of good diet. At home, lives principally on a little tea and dry bread, with potatoes or porridge for dinner. About once a week she has broth, or a little meat. On admission, a large cavity was detected in the apex of the left lung, and there were signs of crude tubercle in the apex of right lung. There was great emaciation, considerable sweating, purulent expectoration, and occasional diarrhœa and hæmoptysis. She remained in the house four months and a-half, having been treated with cod-liver oil, counter-irritation to the chest, and good diet. She was dismissed, April 10th, at her own request; on which day the report is as follows :—Dulness under left clavicle; dry blowing murmurs in this situation, both with inspiration and expiration, which have been present without change for at least two months. Cough and expectoration trifling. General health good. Says she has not been so strong for the last five years.

In the course of a few months this woman applied at the Royal Dispensary, with the cavity full of pus, and a return of the emaciation and weakness. She was treated with cod-liver oil, but was unable to procure good diet. She again entered the Infirmary, and during the next three years she was alternately getting better in the house, and getting worse at home. I saw her for the last time at the Dispensary, in 1848, when the cavity was evidently much contracted. The conclusion of the case is unknown.

CASE X.—Jane Maitland, æt. 30. This woman had a considerable cavity in the apex of the left lung, with loud gurgling, and perfect pectoriloquy. Between the years 1842 and 1847 she had been in the Infirmary, under different physicians, at least seven times, and probably oftener. Her history is almost the same as the last, with the exception that she was never so much emaciated, and only felt great weakness; always getting worse on the bad diet she had at home, and as regularly getting better during her residence in the Infirmary. The termination of her case is also unknown.

In the following case, although it resembles the two just recorded, the termination was not only known, but the examination of the body after death exhibited the anatomical changes which occur in chronic phthisis when undergoing a cure :—

CASE XI.—Robert Elliot, æt. 28, was admitted into the clinical ward, No. 2, of the Royal Infirmary, December 30, 1844. He had previously left the house two months, having then been under treatment four months, and taking cod-liver oil with marked benefit. On admission he was much emaciated, and there were all the symptoms of phthisis in its advanced stage. On percussion, there was dulness under both clavicles, but to a much greater extent on the left than on the right side. Under the left clavicle, and posteriorly above the scapula, there was loud gurgling râle, with imperfect pectoriloquy. On the right side, there was occasional sibilant râle; harshness of inspiratory, and prolongation of expiratory, murmur; with bronchophony. He took cod-liver oil readily; and was treated, in addition, with numerous remedies to meet occasional symptoms, more especially diarrhœa and hæmoptysis. He left the Infirmary, March 10, 1845, conceiving himself to be nearly well. His strength and general appearance had greatly improved, the physical signs on the right side were unaltered; but on the left, gurgling râles had been for some time absent, and been replaced by dry blow-

ing sounds. Some months afterwards he applied at the Royal Dispensary for some cod-liver oil, and was supplied with it regularly for a considerable time. He entered the Infirmary on two separate occasions subsequently, under different physicians, and was discharged in his own opinion well. In the summer of 1846, I was requested by one of the Dispensary pupils to visit one of his patients, affected with fever. It was this man Elliot, in a state of complete coma, and with the usual symptoms of typhus. I gave directions for conveying him to the Infirmary, but before this could be carried into effect he died.

Post-mortem Examination.—Permission for the examination was obtained with great difficulty, and the chest only was examined. The pleurae covering the apex of the right lung were very slightly adherent. The summit of the lung itself was deeply corrugated and puckered, and felt hard and nodulated. On being bisected, it was found to contain numerous cretaceous masses, enclosed within an indurated cyst, of greyish fibrous matter. The surrounding lung was loaded with black pigment, condensed and puckered; and the spongy substance in the neighbourhood of the indurated portions presented groups of enlarged air-cells—in short, incipient emphysema—(see Plate II., Figs. 1 and 2). The left lung presented two distinct stellate puckerings—one at the summit of the lung, the other about two inches below. Both these puckerings corresponded to a distinct oval cavity (as seen in Plate II., Figs 3 and 4). They both possessed a distinct lining wall, and were surrounded by an indurated capsule, connected with radiating cicatrisations in the pulmonary tissue. In the upper one (See Fig. 4) this was very distinct.

Now, I think there can be little doubt that, if this man had lived a year or two longer, the cavities in the left lung would have completely healed, and that there would probably have existed two cicatrices in the organs similar to that figured in Plate I.

I have confined my illustrations of the treatment of phthisis to well-marked cases, in which it was far advanced, and I think that the facts recorded hold out to us great encouragement in the treatment of this formidable disease. In the early stages its management is not so difficult, and is comparatively much more successful; not, indeed, that even then it is always easy to overcome the dyspepsia and other causes which tend to produce and keep up the disorder. I have pointed out, in another place,¹ that when the stomach is deranged, it often requires, as we have observed in Case I., a variety of remedies, to counteract its irritability and acidity, before nutritive substances can be taken. In other instances, however, especially when it exists in the half-starved poor, food is taken readily, and then amendment is generally soon observed. Again, although cod-liver oil may for a time be digested, it not unfrequently after a time causes nausea, and cannot be tolerated, and under such circumstances chalybeates, with tonics, constitute valuable auxiliaries.

Perhaps there is nothing that requires greater watchfulness on the part of the practitioner during his attendance on a case of phthisis than the disposition his patient so commonly exhibits to consider himself well on the removal of his more urgent symptoms. I have found this to be the great obstacle to conducting cases of

¹ Lectures on Clinical Medicine. Edinburgh, 1850. Part I., p. 43.

phthisis to a favourable termination ; indeed, nothing can be more discouraging to our attempts at cure. Hospital patients, for instance, who continue well when under treatment, at length insist on going out, and returning to the fatiguing occupations and insufficient diet which produced the disease. In the higher classes individuals commit all kinds of imprudencies, which bring on those re-accessions of the disorder which ought to be so carefully guarded against. The hopeful character, and absence of mental depression, which in one point of view are so advantageous, are in another most injurious. We have seen that it always requires a considerable time, under the most favourable circumstances, to produce complete cicatrization of a pulmonary cavern ; and it must be evident that our ordinary hospitals are in no way adapted to such a lengthened treatment. Indeed, unless they were converted into asylums or hygienic establishments, in which employment and exercise, as well as medicines, were given to the inhabitants, the most important part of the treatment cannot be carried out. In short, it is comparatively easy to rally a patient from a state of great exhaustion, to check the perspirations, cough, and expectoration, and restore him to a tolerable state of health ; but it is very difficult, he being in a satisfactory condition, to persuade him to keep himself so.

An equable temperature is certainly a most powerful auxiliary to treatment ; but if, for the purpose of obtaining this advantage, we shut up our patients in rooms, the constraint often becomes intolerable, and a degree of mental depression comes on that does much mischief. Besides, in this way we lose the advantage of exercise, which is so powerful a stimulus to the nutritive functions. On the other hand, when a cavity becomes dry, when exudation is checked, and food digested, we run considerable risk during the winter, but more especially during the spring, in permitting exposure to the cold air, and the excitement, heat, and subsequent chills which, in such weak individuals, exercise occasions. On these points no absolute rule ought to be followed. I have confined several patients to their rooms during cold and changeable weather with much advantage ; and they have subsequently died from imprudent exposure to cold during a voyage to a milder climate, or from some accidental cause that ought to have been avoided. Three cases in which I felt much interested, with large cavities, were in this way, in conjunction with a proper treatment, kept alive, and in tolerable health, from one to three years ; but died on board ship, or on landing in some colony. On the other hand, I have seen great advantage from persons taking moderate exercise, well clothed, and cautioned against standing or sitting in the open air afterwards, so as not to take chill.

Then the complications and occasional symptoms which occur in this disease, present a wide field for the judicious interference of the physician, who will achieve more by saving his patient from unnecessary drugs, and giving nature fair play, than by what is called “doing

something." For instance, I have never been able to satisfy myself of the advantage of giving mineral acids to check the perspirations. In such cases the stomach is generally already too acid; the albuminous matters are easily digested, whilst the oily principles are not. Surely acids will not improve this condition, but rather alkalies, as recommended by Dr Campbell, which I have always found very useful in certain forms of digestive derangement. If the recent researches of Bernard on the functions of the pancreas be attended to, it would appear that the secretion of that organ is alkaline, and necessary for the assimilation of fatty matters. It is very possible that the peculiar dyspepsia of phthisical cases is connected with a deficient secretion of the pancreatic juice. But not to enter upon speculations of this kind, I regard it as an undoubted fact, that the perspirations in phthisis are only evidences of the weakness of the individual. Restore his appetite and power of digestion, increase his strength, and the sweatings disappear. This is not to be done by giving sulphuric or nitric acid, but by cod-liver oil, and a wholesome diet.

I must now bring these remarks to a close, with the intention, however, of continuing the subject at some future period; but I cannot do so, without alluding to the diagnosis of phthisis, and expressing my conviction that the general notion of its incurability is mainly attributable to the fact that it is not recognised until it be far advanced. And yet there is, perhaps, no disease which by one practised in auscultation, may be more readily detected. The harsh or tubular inspiration, the prolonged expiration, the increased vocal resonance, followed by dulness on percussion, together with the well-known general symptoms, can leave little doubt in the minds of the observant. True, there will always be instances so nicely balanced between health and disease, as well as pathological conditions so fine, that they do not furnish indications that will enable us to speak positively. Still, if practitioners only accustomed themselves to detect the signs above mentioned, phthisis would in a great measure be disarmed of its terrors. In short, it is not that medical art is destitute of means of detection, but that the necessary skill is not sufficiently diffused among medical practitioners; for notwithstanding all that has been said and written on auscultation since the days of Laennec, it must be acknowledged among ourselves, that comparatively very few have sufficiently educated their ears to detect the finer thoracic murmurs.

The following are a few of the instances which have come under my notice, illustrative of errors in diagnosis:—

CASE XII.—An unmarried lady, æt. 25, quitted one of the northern Scottish cities, in 1842, to reside in Edinburgh. She had been harassed with distressing cough, dyspnoea, and weakness, for three years, and during that time had undergone all kinds of treatment, general and local, to combat a supposed phthisis pulmonalis. Knowing her family, and noticing her condition, I was confidentially informed by the friends that her case was hopeless, and that her medical advisers considered her lungs to be unalterably diseased. So strong was this opinion, that it was with some difficulty I persuaded the

family to allow me to examine the chest. On doing so, I found the pulmonary organs quite healthy. On percussing over the sixth and seventh dorsal vertebræ, she screamed aloud, and jumped from her seat, as if she had received a shock of electricity. The case was one of spinal irritation and amenorrhœa, which yielded to counter-irritation and appropriate treatment. At the present moment she enjoys excellent health.

CASE XIII.—A young lady, æt. 22, complained, in 1844-5, of great langour, weakness, irregular menstruation, and trifling cough. She applied to two surgeons, of great respectability in general practice, who happened to be attending another member of her family. The friends were informed that nothing was the matter but slight female derangement, and purgatives and emmenagogues were prescribed. In the autumn, she and her family visited a watering-place, and the practitioner there took the same view of the case, and continued the treatment. One morning she was discovered dead in bed; and, to the astonishment of all parties, both lungs were afterwards discovered filled with tubercles and anfractuous cavities.

CASE XIV.—I met a practitioner, some miles from town, in consultation on the case of a gentleman, who, I was informed, was labouring under acute pneumonia. In addition to the intense fever, I was told there was distinct cre-pitating râle over the whole of the right side, and that he had been actively treated by a large bleeding, purgatives, and tartar-emetic. On examining the patient, I found him in the last stage of phthisis with loud mucous and gurgling râles heard over the upper half of right side. He sunk rapidly.

CASE XV.—The daughter of a medical man became very slowly unwell—indeed so slowly that the parents never noticed it. Three weeks before her death, Sir James Clarke was consulted, who detected caverns in the lung, not only to the great grief, but to the unbounded astonishment, of the father.

CASE XVI.—A medical student hurried over from Paris, to attend the medical classes in this university, at the commencement of the session 1843-4. In crossing the channel, he became very ill, and on arriving in Edinburgh laboured under great febrile excitement. The case was considered one of fever, then very prevalent in the city, and treated accordingly. He died in a few days, and on dissection the lungs were found covered with miliary and infiltrated tubercle. It was a case of acute tuberculosis.

Cases of this kind could easily be multiplied. They appear to me capable of showing, that the fatality of phthisis pulmonalis is in a great measure owing to its insidious progress, to its reaching an advanced stage before it is detected, or to carelessness in medical examination, rather than to any peculiar virulence of the disease itself. Many diseases, undoubtedly curable in an early stage, if undiscovered and allowed to proceed unchecked, might be considered equally fatal. In this point of view, it has always appeared to me that our large charitable institutions are incapable of checking the evil. At our dispensaries, and among the out-cases of a large hospital, it is scarcely possible for the physician, on the stated days, to do justice to his patients. I have no hesitation in confessing that on more than one occasion I myself have been prevented from carefully examining patients, from sheer fatigue. I consider the following to be a very common history of many applicants to these charities:—

CASE XVII.—A girl, æt. 19, applied to one of the Dispensaries, complaining of irregular menstruation, constipation, want of appetite, and various dyspeptic

symptoms. She was ordered twelve purgative pills, and directed to take two every other night. Her chest was not examined. Three months afterwards she again applied, with haking dry cough. She was ordered an anodyne and squill mixture, which increased the nausea and dyspeptic symptoms; but she had her bottle filled regularly for two months. Diarrhœa now came on, which greatly reduced her; and, on applying for the third time at the Dispensary, it was *now* seen that she was consumptive. The disease ran a very rapid progress, and she died in the Royal Infirmary.

Now this, I believe, is the case of thousands of persons who perish from consumption; and I feel satisfied that, had the diagnosis of the disease been properly established at an early period, its onward march might have been arrested. Phthisis, in its incipient stage, may be considered a very curable disease; indeed, so much so, that cure is, as we have seen, spontaneously accomplished by nature, in a vast number of cases. So long as misery and poverty exist on the one hand, and dissipation and enervating luxuries on the other, so long will the causes be in operation which induce this terrible disease. But the means of checking and controlling it on a large scale must be sought, not in drugs, but in hygienic conditions, and the diffusion among medical men of that knowledge and skill requisite for detecting the existence of the disease in its early stages. In short, one of the most efficacious remedies consists in those practical instructions of the medical student at the bed-side, which are now systematically carried on in the clinical wards of this and some other schools of medicine.

In conclusion, let no one undervalue percussion and auscultation. And I say this, because I feel satisfied that, notwithstanding every body now-a-days carries about a stethoscope, there are few who derive from it all the advantages it is capable of bestowing. I would take the liberty of recommending to certain writers, in their popular expositions of medicine, in future to avoid sarcasms¹ which are only calculated to excuse indolence in students, and to depreciate the value of the scientific investigation of disease among practitioners. It is, certainly, a good thing to possess the sagacity and practical tact of a Sydenham or an Abercrombie; but it is better still to have, *in addition* to this, the practised ears and pathological knowledge of a Laennec or a Louis.

¹ "We wonder how many of the century of graduates sent forth from our University every year, armed with microscope, stethoscope, uroscope, pleximeter, &c., and omniscient of *râles* and *rhonchi*, sibilous and sonorous; erepitations, moist and dry; *bruits de râpe, de scie, et de soufflet*; blood plasmata, cyto-blasts, and nucleated cells, and great in the infinitely little—we wonder how many of these eager and accomplished youths could 'unsphere the spirit of Plato,' or read with moderate relish and understanding one of the Tusculan dissertations, or who had ever heard of 'Butler's Three Sermons on Human Nature,' 'Berkeley's Minute Philosopher,' or of an 'Essay on the Conduct of the Understanding.'"—*N. Brit. Review*, November 1849. On this subject I am of opinion that, if our university graduates can detect the *râles* above alluded to, and know their diagnostic value, it must be a matter of comparative indifference to mankind whether they are able to "unsphere the spirit of Plato," or not.

EXPLANATION OF THE PLATES.

PLATE I.

FIG. 1.—Apex of the right lung of John Keith (see Case I., p. 4), showing the dense white cicatrix, and surrounding puckering of the pleural surface.

FIG. 2.—The same portion of lung, seen from within, after a section had been removed parallel with the cicatrized surface. It exhibits the black linear indurations surrounding five cretaceous concretions. The summit of the lung has been left, in order to show that portion of the cicatrix and surrounding puckering not seen in Fig. 1.

FIG. 3.—A cretaceous concretion in the apex of a lung removed from the body of a man who died of dysentery.

FIG. 4.—The same portion of lung viewed externally, showing the puckering which corresponds to the cretaceous concretion.

PLATE II.

FIGS. 1 and 2 exhibit the external and internal appearance of the apex of the right lung in the case of Robert Elliot (Case XI., p. 18).

FIGS. 3 and 4 show a section through the apex of the left lung in the same case, viewed on both its sides. It contained two oval cavities in process of healing, surrounded by radiating indurated cicatrices, which corresponded to stellate puckerings on the pleural surface. One of these is seen in Fig. 3, the other in Fig. 4.

These preparations are preserved in the collection of the University.





